

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY


(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

REC'D 01 SEP 2005

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Applicant's or agent's file reference S6070 JV/PL		FOR FURTHER ACTION See Form PCT/PEA/416	
International application No. PCT/IB2004/001346	International filing date (day/month/year) 08.04.2004	Priority date (day/month/year) 17.04.2003	
International Patent Classification (IPC) or national classification and IPC C23C16/34, C23C16/448			
Applicant L'AIR LIQUIDE, SOCIETE ANONYME A DIRECTOIRE ET ...			
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 5 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input type="checkbox"/> sent to the applicant and to the International Bureau) a total of sheets, as follows:</p> <p><input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>			
<p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the opinion</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input checked="" type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p>			
Date of submission of the demand 14.10.2004		Date of completion of this report 02.09.2005	
Name and mailing address of the international preliminary examining authority:  European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016		Authorized Officer Lavéant, P Telephone No. +31 70 340-	



**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/IB2004/001346

Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This report is based on translations from the original language into the following language , which is the language of a translation furnished for the purposes of:

- ☐ international search (under Rules 12.3 and 23.1(b))
- ☐ publication of the international application (under Rule 12.4)
- ☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the **elements*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

Description, Pages

1-13 as originally filed

Claims, Numbers

1-17 as originally filed

Drawings, Sheets

1/5-5/5 as originally filed

☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages
- ☐ the claims, Nos.
- ☐ the drawings, sheets/figs
- ☐ the sequence listing (*specify*):
- ☐ any table(s) related to sequence listing (*specify*):

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages
- ☐ the claims, Nos.
- ☐ the drawings, sheets/figs
- ☐ the sequence listing (*specify*):
- ☐ any table(s) related to sequence listing (*specify*):

* If item 4 applies, some or all of these sheets may be marked "superseded."

**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/IB2004/001346

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	9
	No: Claims	1-8,10-17
Inventive step (IS)	Yes: Claims	
	No: Claims	1-17
Industrial applicability (IA)	Yes: Claims	1-17
	No: Claims	

2. Citations and explanations (Rule 70.7):

see separate sheet

Box No. VI Certain documents cited

1. Certain published documents (Rule 70.10)

and /or

2. Non-written disclosures (Rule 70.9)

see separate sheet

Re Item V.

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1 The following documents are referred to in this communication:

D1 : US 2001/048973 A1

D2: SMIRNOVA T P ET AL: "SiCN alloys obtained by remote plasma chemical vapour deposition from novel precursors" PREPARATION AND CHARACTERIZATION, ELSEVIER SEQUOIA, NL, vol. 429, no. 1-2,(2003-04-01), pages 144-151

D3: VORONKOV M G ET AL: "Silyl derivatives of asymmetric dimethylhydrazine as a reagents for synthesis of composite layers in silicon-structures" IZVESTIYA VYSSHIKH UCHEBNYKH ZAVEDENII, MATERIALY ELEKTRONNOI TEKNIKI, vol. 4, 2002, pages 57-60

2 INDEPENDENT CLAIMS

Lack of novelty

The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claims 1 and 10 is not new in the sense of Article 33(2) PCT.

2.1a Document D1 discloses a method for producing Si_3N_4 by vapor-phase growth, said method being characterized by i) feeding a hydrazine gas and at least 1 precursor gas selected from the group consisting of trisilylamine gas and a silylhydrazine gas into a reaction chamber that holds at least 1 substrate and ii) forming a Si_3N_4 film on said 1 substrate by the reaction of the 2 gases (D1: Claims 1-4, 7-10, figures 1, 6-9, compound 9 and example 1)(Claim 1).

2.1b Besides, document D1 discloses a method for producing Si_3N_4 by vapor-phase growth, said method being characterized by i) feeding a silylhydrazine gas into a reaction chamber that holds at least 1 substrate and ii) forming a Si_3N_4 film on said 1 substrate by the decomposition of said silylhydrazine gas (D1: Claims 1-4, 7-10, figures 1, 6-9, compound 9 and example 1)(Claim 10).

2.2 In addition, document D2 discloses a method for producing Si_3N_4 by vapor-phase

growth, said method being characterized by i) feeding a silylhydrazine gas into a reaction chamber that holds at least 1 substrate and ii) forming a Si_3N_4 film on said 1 substrate by the decomposition of said silylhydrazine gas (D2: pages 144-145)(**Claim 10**).

- 2.3 In addition, document D3 discloses a method for producing Si_3N_4 by vapor-phase growth, said method being characterized by i) feeding a silylhydrazine gas into a reaction chamber that holds at least 1 substrate and ii) forming a Si_3N_4 film on said 1 substrate by the decomposition of said silylhydrazine gas (D3: abstract) (**Claim 10**).

3 DEPENDENT CLAIMS 2-9, 11-17

Dependent claims 2-8, 11-17 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of novelty and/or inventive step (Article 33(2) and (3) PCT).

Re Item VI

Certain documents cited

Certain published documents

Application No Patent No	Publication date (day/month/year)	Filing date (day/month/year)	Priority date (valid claim) (day/month/year)
EP 144 1042 A	28.07.2004	16.01.2004	23.01.2003